# Enterprise Architecture Topics Series

## Implementing SOA with EAI

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# Implementing SOA with EAI

- Service Oriented Architecture (SOA) involves creating "black box" services that can be invoked, with authentication, from various applications and platforms. This definition incorporates Event Driven Architecture (EDA).
- Web services provide an implementation methodology for SOA
- Enterprise Application Integration (EAI) software is used to establish an SOA environment.
  - Defines another tier that
    - Supports web services interfaces
    - Provides interfaces to various databases, applications and COTS products
  - Provides graphical interfaces for establishing new services and/or linking to existing services
  - Provides graphical Business Process Management tools that allow the developer to orchestrate individual services into compound services linked by processes and logic
  - Maintains a repository of available web services
- Goal – Examine EAI products and possible utility at NIH

# EAI Software Progress to Date

- EAI Software Evaluation project established to determine feasibility of EAI at NIH and select a vendor product if it proved feasible.

- EAI Pilot Work Group formed in order to:
  - Define a Proof of Concept based on funding eRA grant awards directly with NBS
  - Establish EAI software evaluation criteria
  - Determine potential for EAI at NIH
  - Select EAI software

- Based on industry literature and Gartner research 5 vendors were selected to conduct POCs.
  - Oracle
  - SeeBeyond
  - Web Methods
  - BEA
  - Tibco

- Each vendor was invited to make a 2 hour presentation to the work group

- Evaluation criteria was filled out for each vendor based on it's presentation.

# EAI Software Progress to Date

- POC lab established in Democracy II
- Each of the vendors implemented the POC using their orchestration tools, adapters, etc.
- Evaluation criteria sheets updated to reflect information gathered from the POCs
- Score sheets were designed to rank the vendors
- Finalize vendor scoring
- Down-select to fewer than 5 vendor
- Develop requirements/assumptions for vendor pricing
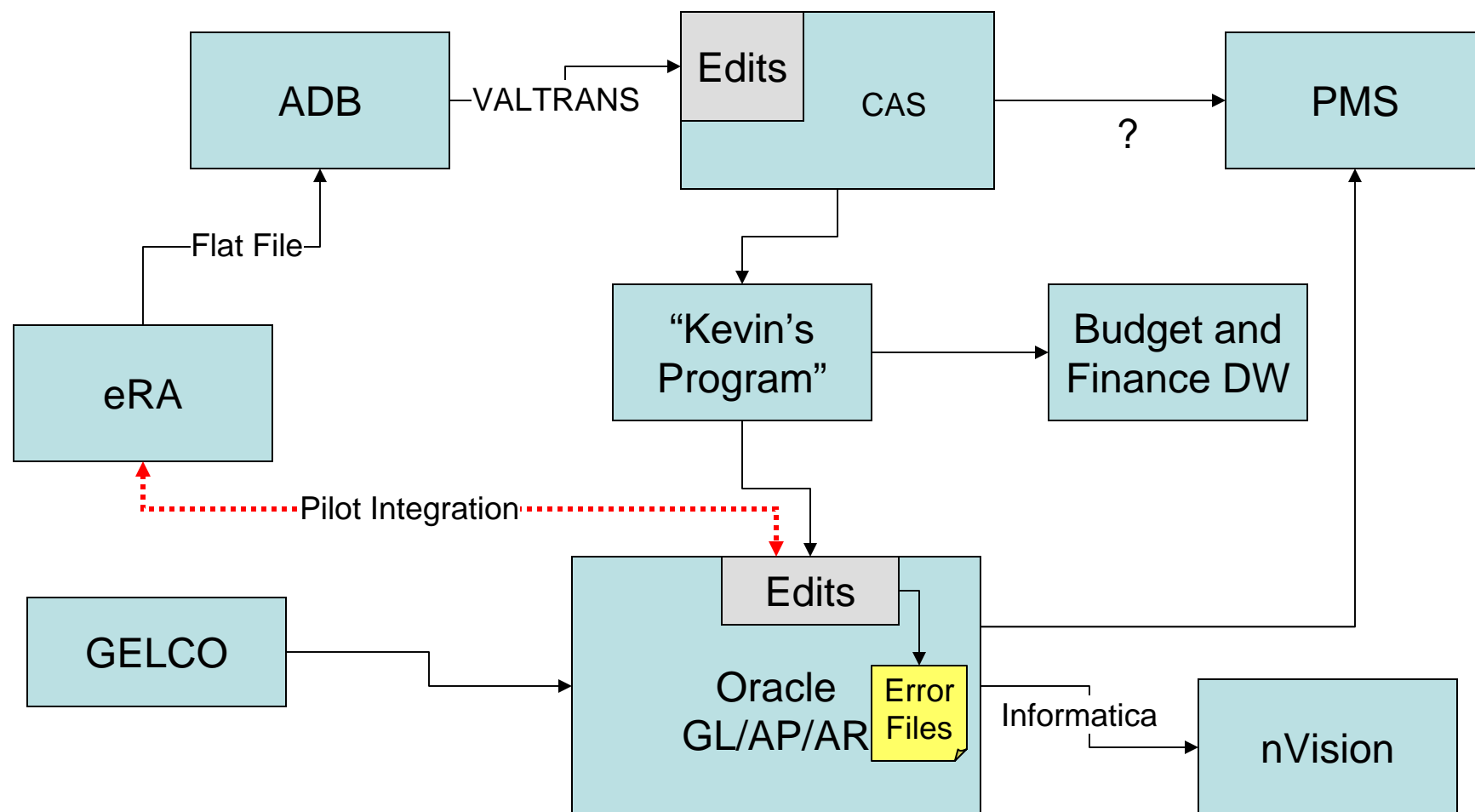- Received prices from vendors
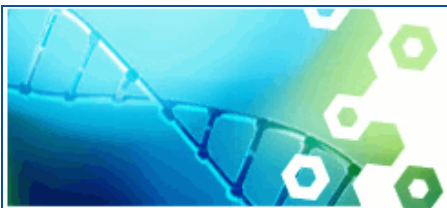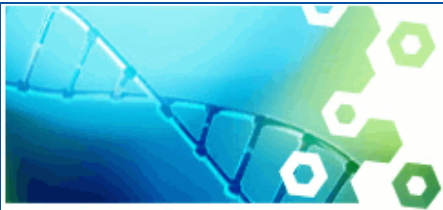
# EAI Pilot Scenario

- Process flow to implement the grants award eRA/NBS functionality (including support for Netegrity and LDAP)

- Current integration to ADB is via flat file transfers

  - Lack of acknowledgement and effective exception processing has negative business impact

  - Transition away from ADB presents an opportunity for a new integration approach.

- There is an opportunity to create more robust integration between eRA and NBS

- Provides ability to audit transactions

# Grant Award Current Process

ADB  —VALTRANS—  [Edits] CAS  —?—>  PMS

ADB —Flat File— eRA

Edits / CAS → "Kevin's Program" → Budget and Finance DW

"Kevin's Program" → Oracle GL/AP/AR

eRA ⋯ Pilot Integration ⋯ Oracle GL/AP/AR

GELCO → Oracle GL/AP/AR [Edits] [Error Files] —Informatica→ nVision

Oracle GL/AP/AR → PMS

# Grant Award – Initial Screen

| ERA Grant Award Application | EAI Objects | NBS |
|---|---|---|

**Get Accounting #'s -- 1** →

Return Accounting #'s

**Get CANS -- 2** →
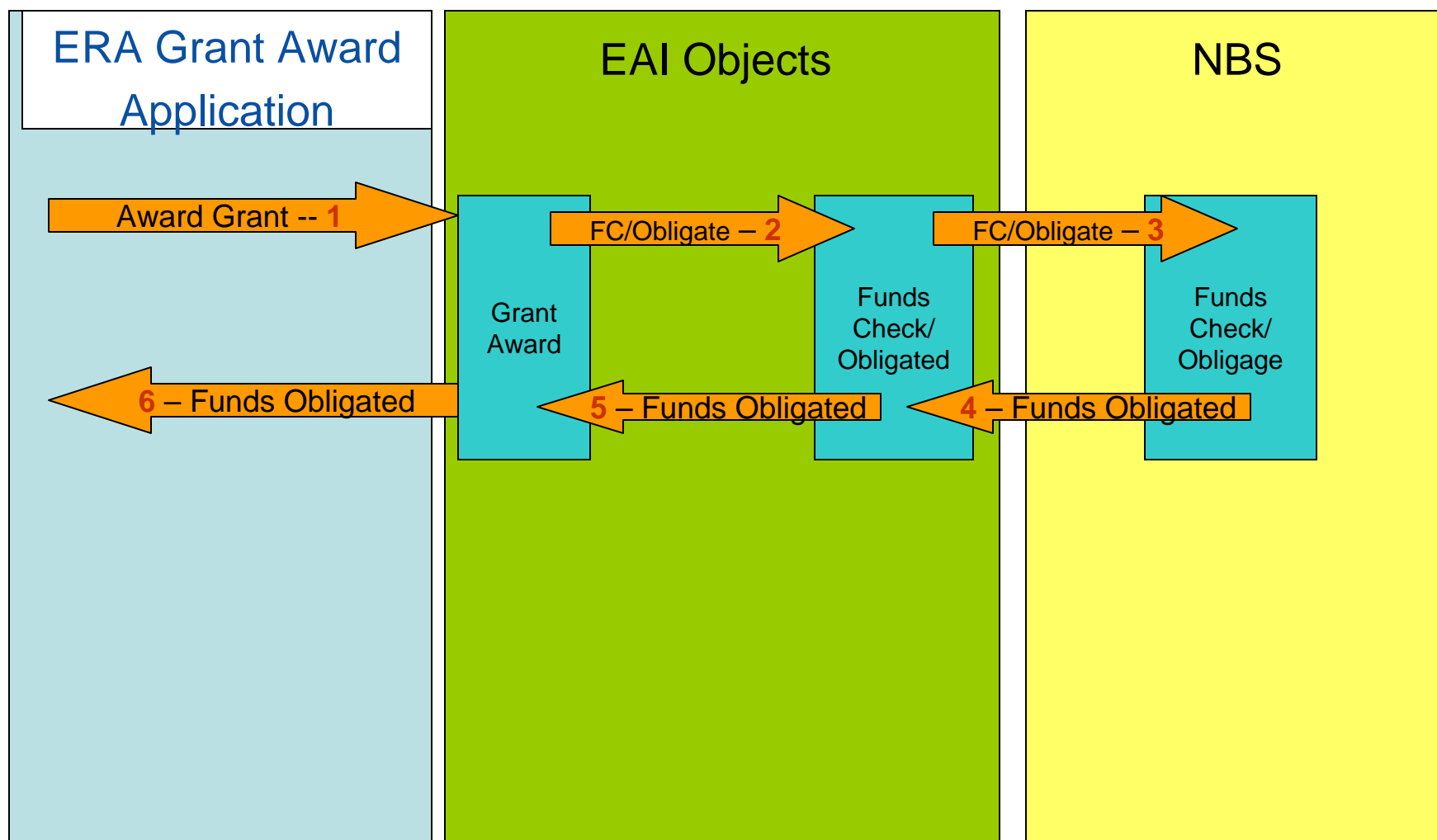
Return CAN #'s

← **4 -- Return List of Acctg #'s**

← **3 -- Return CANS**

Display Grant Award Screen
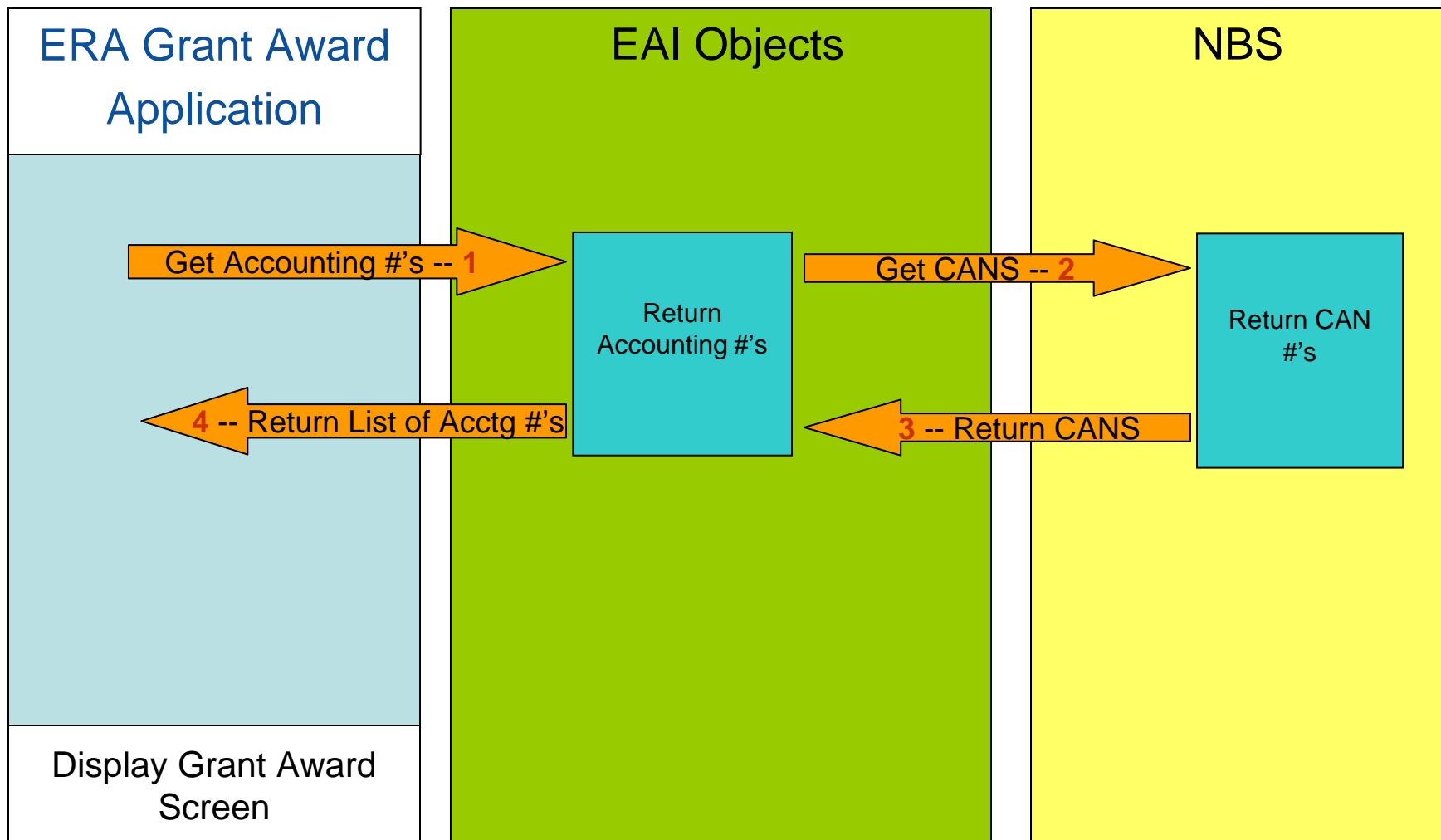
# Grant Award Funds Available



**ERA Grant Award Application**

**EAI Objects**

**NBS**

Award Grant -- **1**

FC/Obligate – **2**

FC/Obligate – **3**

Grant Award

Funds Check/ Obligated

Funds Check/ Obligage

**6** – Funds Obligated

**5** – Funds Obligated

**4** – Funds Obligated

# Grant Award – Funds Unavailable, Obligate Regardless



ERA Grant Award Application

EAI Objects

NBS

Award Grant -- 1

FC/Obligate – 2

FC/Obligate --3

Funds Check

Funds Check

5 – No Funds

4 – No Funds

Grant Award

Obligate Funds —6

Obligate Funds -- 7

Obligate Funds

Obligate Funds

10 -- OK or Error

9 -- OK or Error

8 -- OK or Error

8 Add Rec

Display Response Screen

PMS
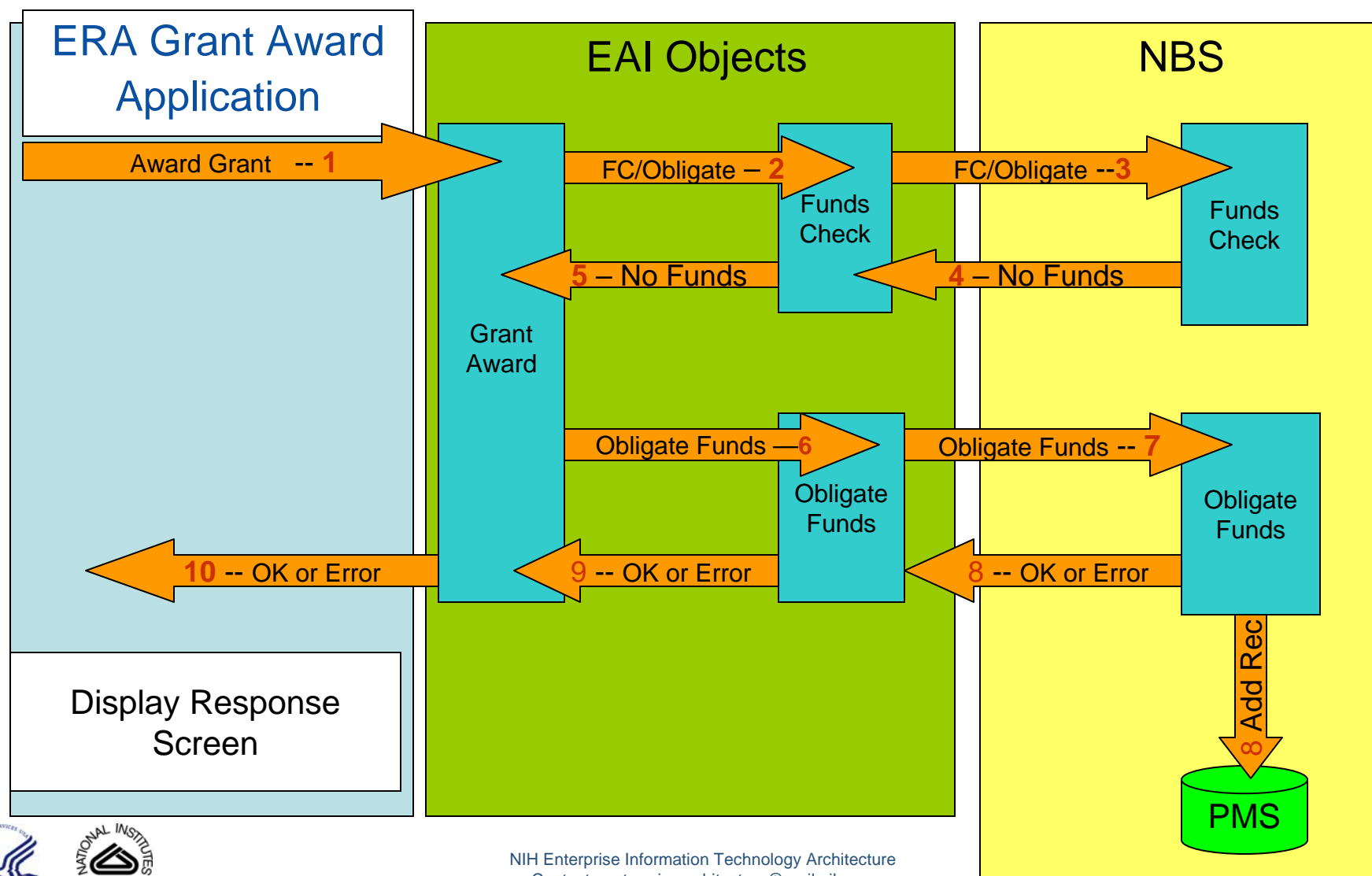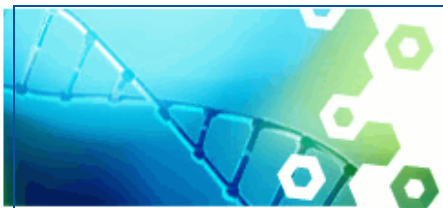
# Grant Award – Funds Unavailable, Ask User

## ERA Grant Award Application

## EAI Objects

## NBS

Award Grant w/Fnds Chk -- **1**

Check Funds — **2**

Funds Available? --**3**

Funds Check

Funds Check

**6** – No Funds Available

**5** --NO

**4** -- NO

Continue? **No/end**

**Yes**

Grant Award

Award Grant w/o Fnds Chk -- **7**

Obligate Funds—**8**

Obligate Funds -- **9**

Obligate Funds

Obligate Funds

**12** -- OK or Error

**11** -- OK or Error

**10** -- OK or Error

**10** Add

PMS

Display Response Screen
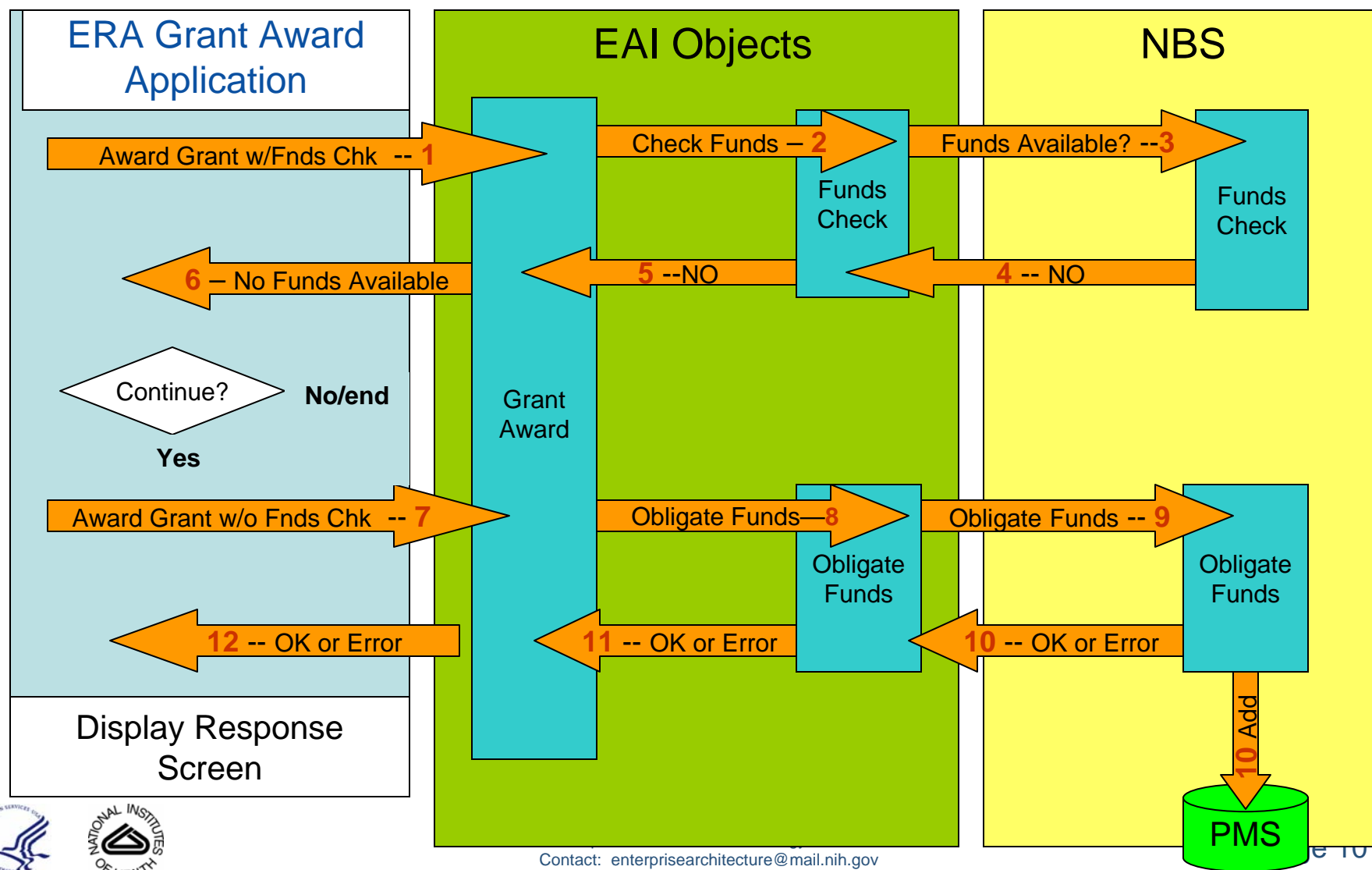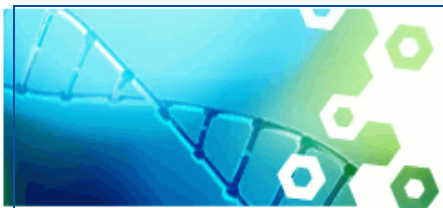
# EAI Software Next Steps

- Select a product
- Establish working group to identify EAI opportunities
- Identify "low hanging fruit" from those opportunities
- Set up an EAI development environment
- Train staff on administration and development
- Begin to organize a competency center
- Develop services for identified opportunities in test environment
- Examine implementing grants award process in test environment